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NEWS READING THE POINTER SPRITE DESIGNER PT. 4 QL TO USB REVIEW GAMING IN SUPERBASIC

MAGAZINE





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recently started a new job of modest means which takes up a

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fair bit of time at the weekends. Suffice to say it is hard work physically and I have now appreciated the work that both my colleagues do in this retail industry and across the sector too.

The job is made slightly easier by software that is very similar to one of our contributors in the past year, has been doggedly trying to improve. I now see why this software is used and why it needs to be improved and that there are many factors involved that have far reaching consequences affecting this planet. Now don't get me wrong, I am not using the editorial for a political soapbox, in this instance, I am just noting how something has 'humble' as the QL/ SuperBASIC can still have a part to play in this world.

I am primarily speaking of Steve Poole's Travelling Salesman program. I didn't really appreciate the importance of this software until you rely upon it when doing deliveries. Timing is important when you have given a customer a delivery window, they are only concerned with their delivery, however the company have many to manage.

The slightest variation on getting from A to B can have a dramatic effect on later deliveries and that there are so many variables that could be factored in. Its not just distance between A—B—C and geographical location etc., you should be able to include weather, time of day, traffic conditions, weight of item, no. of items to name

DITORIAL

some obvious ones. Steve's program, like most I have now seen only cope with a few of these and it is quite obvious we still have a long way to go.

<u>Program Listings</u>

Recent correspondence to the Editor has prompted this consideration for readers of this magazine, in particular those who receive the paper based version. In order to put more characters on each line and keep the same font style (Courier New and thus fixed character spacing) albeit with a smaller point size. Which of the following listing formats would you be happy with in order to read/copy from the magazine in to your favourite QL Editor?

<u>OPTION 1 — OLDER METHOD</u>

1234 REMark This line contains 42 chars **

1235 REMark This line contains 42 chars **

<u>OPTION 2 — CURRENT METHOD</u>

1234 REMark This line contains 49 characters **** 1235 REMark This line contains 49 characters ****

<u>OPTION 3 — POSSIBLE METHOD</u>

Only answers directly to the Editor will be considered.

The Editor

f you have QL-related news items that you'd like us to include on this page, please get in touch with News Editor - Dilwyn Jones at <u>news@quanta.org.uk</u>

DILWYN JONES

SMSQ/E v3.25

QUANTA NEWS

Version 3.25 of SMSQ/E is now available from the SMSQ/E Registrar, Wolfgang Lenerz. The sources and binaries may be downloaded free of charge from http://www.wlenerz.com/smsqe This new version fixes a crash for slightly overlapping windows. The previous release, v3.24, contained a new "Recent" thing, which can keep track of all recently opened files. It implements one general list, which contains the name of files recently opened, irrespective of the job which opened them, and a list for each job that opened one or several files, and which only contains the files opened by this job. The Recent thing is an extension Thing in the usual SMSQ/E meaning, and lists may be obtained via an assembler interface and various SBASIC keywords.

SMSQ/E Boot Sequence

For anybody interested: Marcel Kilgus has written a short essay about the low level boot process of SMSQ/E for anybody daring enough to try to understand it! Read the article on Marcel's blog at http://www.kilgus.net/2016/03/17/smsqe-boot-sequence/ Marcel has given his website a bit of a makeover recently. Have a look at http://www.kilgus.net/2016/03/17/smsqe-boot-sequence/

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SMSQmulator v2.18

Wolfgang Lenerz has released version 2.18 of SMSQmulator, the QL emulator for Java-based systems. This version now has a fullscreen mode. Download SMSQmulator from:

http://www.wlenerz.com/SMSQmulator/

Black Phoenix 1.1.1

Version 1.1.1 of the software collection by Giorgio Garabello is now available to download free of charge from:

http://www.quantum.altervista.org/bp111.zip

Further information is available in English and Italian from Giorgio's website at http://www.quantum.altervista.org/



Screenshot of Black Phoenix

OUD VADIS DESIGN Independent Information Technology Services WWW.QI-QVD.COM



QPC2 IS NOW FREE AND AVAILABLE FROM MARCEL HILGUS WEBSITE

Bruce@ql-qvd.com

Quo Vadis Design 38 Derham Gardens Upminster RM14 3HA UK

Tel: +44 (0)20 71930539 Fax: +44 (0)870 0568755 http://www.kilgus.net/qpc/index.html

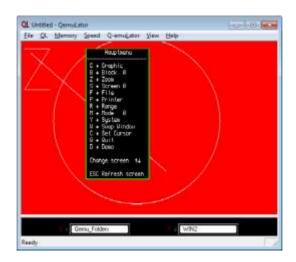
Check the QL News Blog on our website for updates. www.ql-qvd.com/blog

Graphics Construction Kit

Originally published by Ultrasoft, the Graphics Construction Kit is a SuperBASIC command extension which adds a range of new commands to SuperBASIC. Written by Axel and Hans Georg Pabich in 1985, it is 100% programmed in machine code, which make the extensions extremely fast. The toolkit consists of a large number of extensions and comes with a demonstration program written in BASIC.

Permission has now been granted to release this as freeware. Currently, the QL Preservation Group has a copy of version 2.3 of the Graphics Construction Kit. We understand that a version 3.0 was created at one time, but do not have a copy of this to release. If anyone has a copy, we would be pleased to make it available. We currently have a rather poor copy of the manual, which is available as a PDF file, again if anyone has a better copy, we would be pleased to receive a copy to make available. Graphics Construction Kit may be downloaded free of charge from:

http://www.dilwyn.me.uk/graphics/index.html



The demo program from Graphics Construction Kit

Medic Disk Interface ROM Upgrade

Thanks to Derek Stewart, I have been able to make available a copy of the version 1.18a upgrade ROM image for a Medic disk interface. A number of these interfaces, which included a parallel printer port and up to 512K RAM, were produced in the early days before Medic ceased trading. Download the upgrade ROM image from <u>http://www.dilwyn.me.uk/qlrom/index.html</u> under the 'Assorted ROM Images' section.

QEPIII Eprom Image

David Westbury has also successfully extracted an EPROM image for a QEPIII EPROM programmer. He reports that "it is not a straightforward QL ROM image, the data and address lines are jumbled between QL and EPROM (though it appears in the QL memory map correctly)."

The 16K EPROM image and some notes may be downloaded from <u>http://www.dilwyn.me.uk/qlrom/index.html</u> under Assorted ROM Images. As a result, Ian Burkinshaw's QEPIII Service Manual has been updated (on 21st March 2016). Download the updated copy from <u>http://www.dilwyn.me.uk/docs/hardware/index.html</u>

JSTK223 and TK223-16K

The snappily named packages above are basically a 64K image of a JS ROM and Toolkit 2 version 2.23 (JSTK223) and a version of Toolkit 2 v2.23 amended to fit in a 16K EPROM space by removing code for the CLOCK and ALARM procedures, which are supplied separately.

The version updated on 16th March 2016 fixes a minor bug whereby the CHAR_USE extension may not work properly, an issue which arose because of FONT versus FOUNT naming in

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assembler include references. The end result was that a call which should be made to Trap #3 with d0=\$25 (change font) ended up calling Trap #3 with d0=\$2A (define flash mode). Download the amended packages from:

http://www.dilwyn.me.uk/pe/index.html

Tyche ROM Notes

The Tyche ROM (apparently pronounced "tie-chee") was the last unreleased ROM for QDOS systems. Written by Jonathan Oakley, the ROM image is 64KB in size and includes a number of interesting enhancements for a QL-compatible machine which was sadly never released. The ROM can be made to work on a QL, so the QL successor must have been a very compatible machine. David Westbury has disassembled the Tyche ROM and added some notes to the uncommented assembler source. Download the package from:

http://www.dilwyn.me.uk/qlrom/index.html (Tyche ROM section).

TRL ROM

David Westbury has also sent me a copy of an EPROM image for the Technology Research Ltd disk interface. This is an image of a v1.14 ROM from this disk interface which included up to 128K RAM and a parallel printer port. Download from:

http://www.dilwyn.me.uk/qlrom/index.html

QLF Flugtrainer

Flugtrainer is German and means Flight trainer in English. It was written by Kazim Bahar. This program simulates (in real-time) a

mid distance passenger aircraft.

- Moving 3D-graphic at start-up and landing
- Instrumental flight gauges
- 10 continental airports

Detlef Obermann has recompiled the program with Qliberator and did a translation for both the program and the manual into English. The source is in SuperBASIC and the German original is in REMarks. The package is a mere 72KB download (although the manual in Word doc and PDF formats is larger) from:

http://www.dilwyn.me.uk/games/index.html

ZX-Team Meeting, Germany

The German ZX-Team meeting took place in Mahlerts on 11th March 2016. A number of QL users attended. Urs Kônig has released a few pictures which can be seen at:

https://plus.google.com/104042128125238901905/posts/ hUXyn7QTDJf

Follow the discussion on the German forum.tlienhard.com forum, at <u>http://forum.tlienhard.com/phpBB3/viewtopic.php?f=2&t=1811</u> For people like me who don't speak German, the forum translates well with something like Bing Translate – if you have that on your system, in Internet Explorer right click and select Translate With Bing.

SMSQmulator and uQLx on Chromebook

Graeme Gregory has reported success in getting SMSQmulator and uQLx emulators to run on his Samsung Chromebook ARM (Arm v7). He also reported success in getting MAME (MESS is

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now part of MAME core) QL emulation up and running on this platform, including with a Trump Card and 640K RAM emulation.

Graeme described it as "good news for all those people with Raspberry PI2 and similar ARM processor machines. Although he didn't provide much by way of detail, he did provide screen photos. Yet another platform now able to run a QL emulator.







Three photos of a Chromebook running QL emulators

Q-CoCo Update

Bob Spelten jr. has released an update of the Q-CoCo or QL Colour Configurator program, which is used to design colour themes for use with Window Manager 2 systems.

Version 1.62 fixes a small bug capable of crashing the program and has some minor cosmetic changes. Download it free of charge from Bob's website at:

2 명 🖬 🖬 @Colo ink_2 Ink: 1 Title LORD _THM AN/SCROLL LooseIten Available LooseIten Univail. SAUE THM **WINDOWS** Iten faietted LooseIten Highlight FREDR UTHOON HINT WINDOW AppWinItes Rusilable AppUin Outline BUTTONS ink_1 opVinItes Selected MISCELLANEOUS **RppUIn** AppWinItes UnAvail. true 1 AppUinItem Highlight SYNCHRO RESET THM APPLY (8)

http://members.upc.nl/b.spelten/ql/qcoco.html



SMSQ/E Manual

I've issued a minor update of the SMSQ/E manual, version 1.03, which fixes a few minor typos and layout issues, plus adds the FEX_M BASIC keyword.

Possibly of even more interest is the fact that I've created an HTML version which can be read online. It was simply saved as filtered HTML from Word, rather than a purpose-made HTML file, so there may be layout differences, and the index at the end refers to the page numbers of the original A4 manual which don't exist as such when reading online. Hopefully the advantages of having this manual available online will outweigh any layout deficiencies. The online version is about 900KB in length so may take a while to load on a slow internet connection.

The SMSQ/E manual is also available as a PDF file, or as eBook formats .epub, .mobi and .azw3 in both A5 and A4 layout sizes. To access the SMSQ/E manual, point your browser at the documentation page <u>http://www.dilwyn.me.uk/docs/index.html</u> on my website and click either on the link to the Online SMSQ/E Manual or eBooks page.

Note that this version does not yet include details of the recently added 'Recent' thing in SMSQ/E – see SMSQ/E v3.25 news item above.

Propeller QL

A few years ago there was talk of a QL-compatible board based on propeller chips, sometimes used in robotics. Then the website just disappeared and I thought that was that - I remember the site saying a few boards had been built, but not much more than that. Norman Dunbar (he of the Assembler Programming series) has let

RWAP Software

We have been working hard to categuard the future of the Sinclair QL through creating an online QL Wiki backed by a repository of QL titles.

The QL Wiki enables people to see what software and hardware was produced for the Sinclair QL. The repository enables people to purchase working copies when their microdrive cartridges fall, or they move ooto disks or emulators. Where we can, we obtain permission from the copyright holders to re-release items on the market.

This has enabled us to bring some of the titles back to the market as well as ro-kindle interest in the Sinclair QL and its emulators.

Old favouritas brought back to life include: E.V.A., Vroom Black Knight, Double Block Jungle Eddl, The Lost Pharash Pangi, the Lonely Joke Microdeal's Flight Simulator, QL Hopper, The King, Night Nurse and Cuthbert in Space Mortville Manor, Darkside of the Moon (£20)

We still retain our existing catalogue, including: Open Gell, Return to Eden, Stone Raider II, The Prawn, Hoverzone, Lost Kingdom of Zhal, Deathstriks, Horroday, Flightdeck and QWord

All games are available on disk or for use with Q emuLator on the PC from OVIVES crob

Microdrive versions also available - from £10 each. Memory / system limits may apply - please check before ordering.

Visit the QL Wiki for more details on software, books and hardwara for the Sinclair QL: www.rwspedventures.com/ q_{\perp}^{i} wiki

RWAP Software 3 Dale View Court, Fulford, Stoke-on-Trent Staffordshire ST11 98A Tel: 01782 398143 Email: rich@rwapservices.co.uk

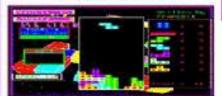
Website:

www.rwspsoftware.co.uk or www.sellmyretro.com





Mortville Manor by Pyramide



Double Block by Francols Lanciault



Night Nurse by Microdeal

me know via my blog that he has found the new location of the site about these systems. Indeed, the new pages go on to discuss 68020 and 68040 versions of the pPropQL as the board is known. I quote from Norman's message (notice how he just casually says he "was bored this morning"!):

"I was bored this morning! :)

I found that Wikispaces, where the links in the main article point, had stopped providing free wiki space to non-educational projects. Hence the vanishing on the Propeller stuff. I found links to the QL Emulator at <u>https://github.com/rosco-pc/propeller-wiki/wiki/</u> and also to a Q20 version at:

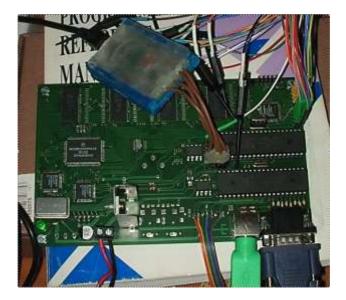
https://github.com/rosco-pc/propeller-wiki/wiki/pPropQL020.

There's also a Q40 version "in progress" at:

https://github.com/rosco-pc/propeller-wiki/wiki/pProp040 but it's brief and not updated since February 2015."



pPropQL 68008 board



pPropQL020 board



pProp040 board, minus the 68040 microprocessor

Archivist and Cardfile

Archivist was published by Ark Distribution and written to work with the Archive Run Time Package. It provides an easy to use interface for maintaining archive records. Cardfile is a program providing a friendly, but comprehensive database environment, based on a simple card index, and written to work with the Archive Run Time Package.

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Each card can hold up to 42 fields covering things such as personal, company and mail addresses, as well as general information. The program also includes over 30 options, including computer assisted insertion, alteration, mail file generation and printing of whole records and single or selected mailing addresses. Both Archivist and Cardfile have now been released as freeware by the publisher. Download both programs from:

http://www.dilwyn.me.uk/database/index.html

Easyptr 4 Now Freeware

Marcel Kilgus has decided to release Easyptr 4 as freeware. He has written a blog entry about his life with Easyptr and after reading it you get the chance to download it free of charge. There are two downloads, the full Easyptr 4 package and a PDF file of the manual. Read the blog and download from:

http://www.kilgus.net/2016/04/07/easyptr-and-me/

On that page you can also make a small donation to Marcel for his hard work over the years – several ways to donate, and to set a good example I did donate myself. You can download some articles about Easyptr from my website at:

http://www.dilwyn.me.uk/docs/easyptr/index.html

including an introductory tutorial written many years ago by Norman Dunbar – go to Easyptr Turorial on that page.

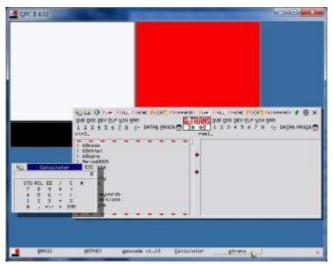
Brouhabouha Forth Repackaged

This forth language system has been repackaged by Marcos Cruz, improving the documentation, editing it and converting it to more

modern formats, and fixing a broken file header into the bargain. Download it from the Programming Languages page on my website: <u>http://www.dilwyn.me.uk/language/index.html</u>

Q-Bar

It's some time since I've released a new QL program, so I'm very pleased to announce the release of my Q-Bar taskbar and start menu system for SMSQ/E or QDOS with pointer environment version 2 or later.



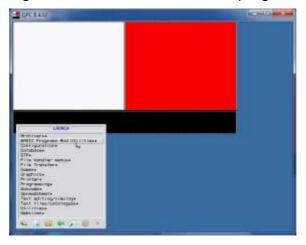
Q-Bar Taskbar (At The Bottom Of The Screen)

Q-Bar features an auto-hide taskbar, which displays a list of running jobs and lets you pick or remove those jobs. The taskbar can be set to appear on any of the four edges of your screen, and may be set to auto-hide, i.e. only appear when the pointer is near that edge of the screen (auto-hide can be turned off if you prefer, in which case it works like a normal QL program).

The Start menu is a bit like the Quicklaunch menu in my Launchpad system. Just click on the little red, white and black icon

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(it looks like the QL monitor screen) to make the Start menu appear. This menu can have sub-menus, so you can create groups of programs, e.g. Games, Databases, BASIC programs...



Q-Bar Start Menu

No more tedious typing EXEC commands and filenames to start your favourite QL programs – just add them to the launcher menu and click on them to start them every time you want to use them. You can manually run programs too, by typing in their filenames or using the file menu system to locate them if you feel you don't use them often enough to warrant adding them to the menus.

The launcher includes a Locate screen too (click on the magnifying glass icon) so that if you are not sure where you stored the program on a drive, or can't remember the full filename, you can type in a partial filename and let Q-Bar search for it for you. Q-Bar can work with other program launcher systems such as my Launchpad or Q-Dock programs. Q-Bar is a freeware program, which is available to download from:



Kaiser-Wilhelm-Str. 302 47169 Duisburg, Germany

SMSQ.J-M-S.COM

EMail: SMSO@J-M-S.com

Thanks to Marcel, QPC2 is now freely available. You can download it from Marcels homepage www.Kilgus.net

If you wish to print from QPC2, then you need **QPCPrint**

... which is available from J-M-S.

Only 39.90 if you choose EMail delivery. For additional 4 EUR, delivery will be on CD. QPCPrint will allow you to print to (more or less) every printer which is installed under Windows (dot matrix, ink, laser, PDF "printer", FAX "printer" etc.)

You can place your order via letter or use the SSL order form on SMSQ.J-M-S.COM - click on "Online orders".

If you order by Mail or through the SSL contact form: We now accept VISA, MasterCard, Diners Club, JCB, Discover, UnionPay, BCard, DinaCard and American Express! The order form has not been updated for the new card types at the time I write this ad, but it will be updated soon. I am still working on changing the forms and implementing SEPA on all the order forms. n the Pointer Environment reading the pointer is fundamental. A programmer has two ways of doing this: by a vector, WM_RPTR and by the Trap #3 routine IOP_RPTR. The first of these is commoner. In many programs this will be the last instruction needed.

GEORGE GWILT

The vector detects where the pointer is and takes action when needed. For example if a mouse click is made on a loose item the vector calls the appropriate subroutine. When the subroutine is finished control returns to the vector.

The second method of reading the pointer, the Trap #3 routine, underlies the vector's code. But it is sometimes necessary for a programmer to use it directly. The routine finds where the pointer is and returns when the conditions called for by the contents of D2 are satisfied. Examples of such conditions are:

- 1. In window.
- 2. Out of window.
- 3. Pointer moved from position in D1.

READING THE POINTER

In a program using the vector it will be necessary to exit from that in order to employ the Trap. Also, when operations requiring the Trap are finished the vector will have to be used once again. Since WM_RPTR will return if D0 is non zero a programmer can arrange that one of the loose items will set D0 to, say, 1. A test for this when the vector returns will alert the programmer to the need to use the Trap. It will be necessary also to have some means of causing the program to use the vector again when it is finished with the Trap.

An example of this is given in the program EX3_BIN, part of EasyPEasy, which illustrates writing to the screen using the mouse. Writing is allowed by the loose item "OFF" and then disallowed by pressing ENTER or by a right click on the mouse. The writing is performed by the use of the Trap.

A second example of the use of the Trap is given in EX4_BIN. Here, the program illustrates the use of the mouse to drag a rectangle inside a sub-window. This is achieved by ignoring the vector altogether and manipulating the loose items entirely by the Trap.

Both these methods have disadvantages: the first requires the user to press keys to switch between the methods of reading the pointer and the second requires much extra program.

It may be that the programmer wants to monitor the pointer's position and take action only when it is in a particular application sub-window. In that case a third option is available.

In a window definition each application window must have a pointer to a hit routine which is called by the vector WM_RPTR whenever the pointer is found within the sub-window.

This routine can be used by the programmer to read the pointer by the Trap IOP_RPTR. An example of this is as follows:

; On entry

- ; D1 = the pointer position (absolute)
- ; A0 = the window ID
- ; A1 -> the status area
- ; A2 = the window manager vector
- ; A3 -> window working definition

rloop	moveq	#-1,d3	
rlp1	bsr	act1	action routine 1
	moveq	#8,d2	find pointer
	moveq	<pre>#iop_rptr,d0</pre>	
	bsr	tp3	on a move
	tst.w	wsp_swnr(a1)	app window 0?
	beq	rlp1	yes
rlp2	bsr	act2	action routine 2
	moveq	#0,d4	
	moveq	#0,d0	
	rts		

There are two action routines in this example, "act1" and "act2". The first is called when the pointer moves within the sub-window and the second if the pointer moves outside the sub-window.

When WM_RPTR calls rloop (as the hit routine) we know that the pointer is within the sub-window so that we can immediately call "act1".

Thereafter the program keeps calling "act1" until the pointer moves away from the sub-window, when "act2" is called and the routine ends leaving D0 and D4 zero thus ensuring a good return to WM_RPTR.

The item wsp_swnr(a1) is the number of the application sub_window enclosing the pointer. To test for a sub_window whose number is non-zero, k, say the instruction

tst.w wsp_swnr(a1)

would have to be altered to

cmp.w #k,wsp_swnr(a1)

When this method is applied to the program EX3_BIN, it greatly improves the user's experience.

- The number of loose items is reduced to 4. These are the normal 'move', 'resize' and 'exit' icons together with 'Clear'. The item 'OFF', needed to switch to drawing mode has been dropped.
- 2. In EX3_BIN activating the loose item 'OFF' causes all the loose items to be unavailable, all now having green backgrounds. It also causes the possibility of writing to the program's window by pressing and moving the mouse. To reactivate the loose items it is necessary to press ENTER or right click on the mouse. With the new version the loose items are always available as is the ability to write to the screen.

Status Area

In the snippet of program given above, the item 'wsp_swnr' from the status area is used. This area, which is used as communication between the PE software and the application, contains various items which someone using the trap IOP_RPTR to read the pointer will find useful. The most important of these are shown below. A complete description of the status area can be found in Norman Dunbar's site 'qdosmsq.dunbar-it.co.uk'.

Label	Position	Item
wsp_chid	8	channel ID of window enclosing the pointer
wsp_swnr	12	app sub-window number or -1
wsp_xpos	14	x pixel position of pointer in sub-window
wsp_ypos	16	y pixel position of pointer in sub-window
ws_ptpos	32	absolute pointer position (long word)

SPRITE DESIGNER PT 4 LEE PRIVETT

n the last part of the SpriteDesigner we have the rest of the SuperBASIC listing. This is also littered with REM statements which hopefully explain and make sense of what is going on in each routine. The procedure ToRandom Puts randomised colours into the grid as a quick starting point for a sprite to have some data, but also it allows you to test the program without the need for actually designing a sprite.

```
4140 DEFine PROCedure ToRandom
4150 LOCal x, y, t
4160
      Mess "RANDOMISE GRID "
4170
     BLOCK #6,508,10,0,0,3
4180 t=Cur Pressed("12")
       IF t = 1 : RETURN
4190
4200
      IF t = 2:
4210
         FOR x = 0 TO xm
4220
          FOR y = 0 TO 15
           IF mo = 4 THEN
4230
4240
             New Col = (INT(RND(7)/2))*2
4250
           ELSE
4260
             New Col=INT(RND(7))
4270
           END IF
4280
           p(x,y) = New_Col
4290
          END FOR y
4300
         END FOR x
4310
        Update Matrix
4320
      END IF
4330 END DEFine
4340 :
4360 REMark Key pressed routine
```

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- 4380 :
- 4390 DEFine FuNction Key_Pressed (KP\$)
- 4400 REPeat loop
- 4410 KP=CODE(INKEY\$)-48
- 4420 IF KP INSTR KP\$ THEN EXIT loop
- 4430 END REPeat loop
- 4440 Messy "Colour "&KP&" has been chosen"
- 4450 RETurn KP
- 4460 END DEFine
- **4470 :**
- 4490 REMark Cursor Key pressed routine
- 4510 **:**
- 4520 DEFine FuNction Cur_Pressed (CP\$)
- 4530 LOCal CP, loop
- 4540 REPeat loop
- 4550 CP=INT((CODE(INKEY\$)-184)/8)
- 4560 IF CP INSTR CP\$ THEN EXIT loop
- 4570 END REPeat loop
- 4580 RETurn CP
- 4590 END DEFine
- 4600 **:**
- 4620 REMark Grid and small grid is drawn
- 4630 REMark from the array p()
- 4650 **:**

4660 DEFine PROCedure Update Matrix 4670 LOCal x,y 4680 OVER #3,0 $4690 \quad \text{FOR } \mathbf{x} = 0 \quad \text{TO } \mathbf{xm}$ FOR y = 0 TO 15 4700 4710 PixelCol=p(x,y)STRIP#3, PixelCol: INK#3, PixelCol:PAPER#3, 4720 PixelCol 4730 AT #3,y,x : PRINT #3,"w" 4740 BLOCK#1, Ste,1,(x+(8/Ste)) *Ste,y+16,PixelCol 4750 END FOR y 4760 END FOR x 4770 INK #3,7 : OVER #3,-1 4780 END DEFine 4790 : 4800 : 4810 **:** 4830 REMark Saves a character into memory **4850** : 4860 DEFine PROCedure ToSave (sprn) 4870 LOCal t 4880 Mess "Save to Chr - "&sprn : OVER #6,-1 4890 BLOCK #6,508,10,0,0,4 4900 t=Cur Pressed ("12") 4910 IF t=1 : RETurn

Page 30 of 56

4920 IF t=2 THEN 4930 PleaseWait 4940 SPRlsch sprn 4950 adr=anf+sprn*64 4960 FOR re=0 TO 15 4970 word=0 : m=04980 FOR sp=0 TO xm 4990 IF sp=po+1 : m=po+1 : POKE_W adr,word : word=0 : adr=adr+25000 pfa=p(sp,re) : pfa2=0 5010 IF pfa>3 : pfa=pfa-4 : pfa2=2 5020 IF mo=4 : pfa=pfa/2 : pfa2=pfa2/2 5030 word=word+pfa*(mo/2)^(po-sp+m)+pfa2* $(mo/2)^{(po-sp+m)*256}$ 5040 END FOR sp 5050 POKE W adr,word : adr=adr+2 5060 END FOR re 5070 SPRlsch sprn 5080 Completed 5090 PAUSE 50 5100 END IF 5110 END DEFine 5120 : 5140 REMark Loads a character from memory 5160 **:** 5170 DEFine PROCedure ToLoad (sprn)



FOR-SALE

And other areas around Manchester, the home of the publishers of QUANTA (MUST BE SEEN), three available items - Comments, Programming, Reviews. Offers in excess of 100 words to the Editor will be accepted

CAT FOUND!

A big thankyou to all those who helped finding the lost cat from the numerous CAT-5 and other Ethernet cables used in a recent project to connect the QL to the internet (or Tinternet as Peter Kaye would say). My CAT-5 cable box-set is now complete and in a better state of disrepair than it was. CAT-5 cables and connections do have other names but that's another advert in another magazine. For the rest of you reading this, if you have a QL based project that you think others would benefit from then please contact the Editor on how this is possible, go on, you know it makes sense.

WANTED

With **FTC** (Fleet Tactical Command) having been found, I'm now trying to track down FTC II by **Diren** which is currently missing in action. I'm also after **Top Team** by **Arunsoft** which was a football management game. If you can help please contact Peter at:

peetvanpeebles@yahoo.co.uk

###-SPACE-###

The final frontier, these are the continuing requests for people to write in and publish something for the QL

£££ SPARE-TIME?

Do you have any spare time, even just 1 hour every two months or so, and you haven't written in yet? Shame on you. Earn yourself lots of gratitude with a certificate of thanks. normally sent by email, by contributing something to the magazine. We can't pay you £££s or ££s or even £ but what you will be doing will be rewarding in itself and you get your name in typeset style lights (without the lights bit). Interested?, then contact the editor of the magazine via the contact page inside the front cover. Not interested?, then contact the editor of the magazine via the contact page inside the front cover. We will be glad to hear from you.

Chickens Needed

Loads of chickens are needed to provide eggs for breakfast and other foodstuffs. If you keep chickens like I do, then you know the benefits of this as well as the pitfalls, however, DON'T EAT THEM (chickens that is). For all you other chickens, why not write or submit that SuperBASIC listing for the magazine. Short Listings - any number of lines really, from just a few to a couple of pages, single or multiple procedures and functions. As long as you have written to either solve or explore a programming problem. Or even just for a bit of experimental fun. Long listings? No program is too big, no language too strange, whether its just concepts, SuperBASIC, block diagrams, Boolean logic, assembler, mnemonics (that's one for you George), C# C++ C- - or just plain C, Pascal, Fortran or even S*BASIC, anything about everything would be appreciated. What if you don't know if your program listing is too long to be short or too short to be long? NO WORRIES, we accept medium listings too, all throughout the year. So get writing now and DON'T BE A CHICKEN!

Contact us in the usual way, so contact us NOW!

If you would like to place a small ad then go to page 2 for full details of how to go about it, options are for QUANTA members as well as non-QUANTA members. Also...QUANTA readers! please note that if you don't tell us what you want, we don't know, we are not mind-readers. Help us improve the magazine by having your say, making your point and eating that curry.

```
5180 LOCal t
5190
       Mess "Load from Chr - "&sprn: OVER #6,-1
5200 BLOCK #6,508,10,0,0,4 : PAUSE 20
5210 t=Cur Pressed ("12")
5220
       IF t=1 : RETurn
5230
       IF t=2 THEN
5240
       PleaseWait
5250
       adr=anf+sprn*64 : AT #3,0,0 : OVER #3,0
5260
         FOR re= 0 TO 15
5270
          loWORD
5280
         m=0
5290
           FOR sp=0 TO xm
5300
            IF sp=po+1 : m=po+1 : loWORD
5310
             pfa=by1 DIV (mo/2)^(po-sp+m) : by1=by1-
pfa*(mo/2)^{(po-sp+m)}
5320
             pfa2=by2 DIV (mo/2)^(po-sp+m) : by2=by2-
pfa2*(mo/2)^{(po-sp+m)}
            IF mo=4 : pfa2=pfa2*2 : pfa=pfa*2
5330
             p(sp,re)=pfa+pfa2*2 : INK #3,pfa+pfa2*2 :
5340
STRIP #3,pfa+pfa2*2
            PRINT #3,"w";
5350
5360
             BLOCK#1, Ste,1,(sp+(8/Ste))
*Ste,re+16,pfa+pfa2*2
5370
           END FOR Sp
5380
         END FOR re
        OVER #3,-1
5390
5400
       INK #3,7
5410 Completed
```

- 5420 PAUSE 50
- 5430 END IF
- 5440 END DEFine
- 5450 **:**
- 5460 DEFine PROCedure loWORD
- 5470 word=PEEK_W (adr) : adr=adr+2
- 5480 IF word <0 : word=65536+word
- 5490 by2=INT(word / 256) : by1=word-by2*256
- 5500 END DEFine
- 5510 :
- 5520 **:**
- 5540 REMark ##Commands for Load and Save##
- 5550 REMark ##Sprite, Store Set and Fill##
- 5570 **:**
- 5580 DEFine PROCedure Command
- 5590 LOCal t, loop
- 5600 IF KEYROW(1)<>0 : GO TO 5600
- 5610 bef=0
- 5620 DBef
- 5630 REPeat loop
- 5640 PRINT #6, "COMMANDS"; : Arrow : OVER #5,-1
- 5650 PRINT #6,"^TAB"
- 5660 BLOCK #5,132,10,0,bef*20+20,7
- 5670 t=KEYROW(1):u=KEYROW(5)
- 5680 IF t=0 AND u=0: GO TO 5670
- 5690 BLOCK #5,132,10,0,bef*20+20,7

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5700	IF t=4 AND bef>0 : bef=bef-1 : DBef
5710	IF t=128 AND bef<3 : bef=bef+1 : DBef
5720	IF t=2 : EXIT loop :REMark Left Arrow
5730	IF u=8 AND KEYROW (7)=1: EXIT loop :REMark
SHIFT TAE	3
5740	IF t=1 THEN
5750	BLOCK #5,132,10,0,bef*20+20,7
5760	SELect ON bef
5770	=0 : ToLoad sprn
5780	=1 : ToSave sprn
5790	=2 : ToFill fa
5800	=3 : ToStore
5810	END SELect
5820	BLOCK #5,132,10,0,bef*20+20,7
5830	END IF
5840	IF KEYROW(1)>0 : GO TO 5840
5850 EN	ND REPeat loop
5860 END	DEFine
5870 :	
5880 REMa	ark ####################################
5890 REMa	ark Stores the chars to a default file
5900 REMa	ark ####################################
5910 :	
5920 DEF	ine PROCedure ToStore
5930 PF	RINT #6,"(¼)BACK OR (½)SAVE" : OVER #6,-1
5940 BI	LOCK #6,508,10,0,0,4 : PAUSE 20
5950 t=	-Cur_Pressed ("12")
5960 IB	f t=1 : RETurn

- 5970 IF t=2 :
- 5980 PleaseWait
- 5990 DELETE DD\$&"sprsys_bin"
- 6000 SBYTES DD\$&"sprsys_bin",anf-4,3050
- 6010 PAUSE 5
- 6020 Completed
- 6030 PAUSE 50
- 6040 END IF
- 6050 END DEFine
- 6060 :
- 6080 REMark This checks the mode of the screen
- 6090 REMark and acts accordingly memory byte
- 6100 REMark formatting
- 6120 **:**
- 6130 DEFine PROCedure chmode
- 6140 FOR n= anf TO anf+1280 STEP 2
- 6150 byte=PEEK(n)
- 6160 newbyte=0
- 6170 we=1
- 6180 FOR x=0 TO 7
- 6190 IF x MOD 2= 1
- 6200 IF (byte MOD 2)=1
- 6210 newbyte=newbyte+we
- 6220 IF mo=8 : newbyte=newbyte+we/2
- 6230 END IF : REMark *** Added during reformat
- 6240 END IF : REMark *** Added during reformat

6250 byte=byte DIV 2

- 6260 we=we*2
- 6270 END FOR x
- 6280 END FOR n
- 6290 IF mo=8 : INITmon : MODE 4 : RETurn
- 6300 IF mo=4 : INITtv : MODE 4 : RETurn
- 6310 END DEFine
- 6320 :
- 6330 **:**
- 6350 REMark ## ToBox, fills area of the ##
- 6360 REMark ## edit with colour, ##
- 6370 REMark ## with the option to cancel ##
- 6390 **:**
- 6400 DEFine PROCedure ToBox (colf)
- 6410 Mess "DRAW BOX, COLOUR "&colf
- 6420 BLOCK #6,508,10,0,0,3
- 6430 t=Cur_Pressed("12")
- 6440 IF t=1 : RETurn
- 6450 IF t=2
- 6460 PleaseWait
- 6470 OVER #3,0 : STRIP #3,colf : INK #3,colf
- $6480 \qquad \text{FOR } x=0 \text{ TO } xm$
- 6490 FOR y=0,15
- 6500 AT #3,y,x : PRINT #3,"w"
- 6510 p(x,y)=colf
- 6520 BLOCK#1, Ste,1,(x+(8/Ste))*Ste,y+16,colf

6530 END FOR y
6540 END FOR x
6550 FOR y=1 TO 14
6560 FOR x=0, xm
6570 AT #3,y,x : PRINT #3,"w"
6580 p(x,y)=colf
6590 BLOCK#1, Ste,1,(x+(8/Ste))*Ste,y+16,colf
6600 END FOR x
6610 END FOR y
6620 INK #3,7 : OVER #3,-1
6630 Completed
6640 PAUSE 50
6650 END IF
6660 END DEFine
6670 :
6680 REMark ************************************
6690 REMark ** Prints at the bottom of **
6700 REMark ** screen, PLEASE WAIT! **
6710 REMark ************************************
6720 :
6730 DEFine PROCedure PleaseWait
6740 text\$="== P L E A S E W A I T ! == "
6750 LengthOfText = LEN(text\$)
6760 OVER#6,0 : PAPER#6,6 : INK#6,0 : CSIZE#6,2,0 :
CLS#6
6770 FOR f = 1 TO LengthOfText : PAUSE 2:
PRINT#6,text\$(f); : END FOR f
6780 INK#6,2

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```
6790 PAUSE 30
6800 OVER#6,-1
6810 END DEFine
6820 :
6840 REMark ** Prints at the bottom of **
6850 REMark ** screen, COMPLETED!
                          * *
6870 :
6880 DEFine PROCedure Completed
6890 texts=" --== COMPLETED! ==-- "
6900 LengthOfText = LEN(text$)
6910 OVER#6,0 : PAPER#6,7 : INK#6,2 : CSIZE#6,2,0 :
CLS#6
6920 FOR f = 1 TO LengthOfText : PAUSE 5:
PRINT#6,text$(f); : END FOR f
6930 INK#6,2
6940 PAUSE 30
6950 OVER#6,-1
6960 END DEFine
6970 :
6990 REMark ** Prints at the bottom of **
7000 REMark ** the screen, a question
                             * *
7010 REMark ** with Cancel or Confirm
                             * *
7030 :
7040 DEFine PROCedure Mess (text$)
```

7050 text\$=" "&text\$&"? (¼)CANCEL (½)CONFIRM"	
7060 LengthOfText = LEN(text\$)	
7070 OVER#6,0 : PAPER#6,6 : INK#6,0 : CSIZE#6,2,):
CLS#6	
7080 FOR f = 1 TO LengthOfText : PAUSE 2 :	
PRINT#6,text\$(f); : END FOR f	
7090 INK#6,2	
7100 OVER#6,-1	
7110 END DEFine	
7120 :	
7130 REMark ************************************	
7140 REMark ** Messy, prints at the **	
7150 REMark ** the message window, **	

RWAP Software

Replacement QL Keyboard Membranes

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Visit the QL Wiki for more details on software, books and hardware for the Sinclair QL: www.wapadventures.com/gl_wiki

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www.rwapsoftware.co.uk or www.selleryretro.com



Why a bad keyboard membrane could change your whole career strategy!

7160 REMark ** a question ** 7180 : 7190 DEFine PROCedure Messy (text\$) 7200 text\$=" "&text\$&"?" 7210 LengthOfText = LEN(text\$) 7220 OVER#6,0 : PAPER#6,6 : INK#6,0 : CSIZE#6,2,0 : CLS#6 7230 FOR f = 1 TO LengthOfText : PAUSE 5 : PRINT#6,text\$(f); : END FOR f 7240 INK#6,2 7250 OVER#6, -17260 END DEFine 7270 : 7290 REMark ** Pend displays the status ** 7300 REMark ** of the cursor drawing or ** 7310 REMark ** the cursor moving * * 7330 : 7340 DEFine PROCedure Pend 7350 AT 21,1 7360 IF pen = 1 THEN 7370 PRINT "Pen Down" 7380 ELSE PRINT " Pen Up " 7390 7400 END IF 7410 END DEFine

7420 : 7440 REMark ** DBef displays info about ** 7450 REMark ** the four original options** 7460 REMark ** from the Command window ** 7480 : 7490 DEFine PROCedure DBef 7500 OVER#5,0 7510 AT#5,10,0 : PAPER#5,2 : INK #5,7 7520 SELect ON bef 7530 =0 7540 PRINT#5, "Load a Sprite frommemory intothe Editor н 7550 =1 7560 PRINT#5,"Save the Editor Window intoa selected Sprite н 7570 =2 PRINT#5,"Fill the Editor Window 7580 with a colour " 7590 =3 7600 PRINT#5,"Store a Sprite Set to default drive and file н 7610 =4 : PAPER#5,4 7620 PRINT#5," н 7630 END SELect 7640 OVER#5,-1

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7650 END DEFine 7660 : 7680 REMark ** Message displays info * * 7690 REMark ** about the Sprite Number ** 7710 : 7720 DEFine PROCedure Message 7730 OVER#5,0 7740 AT#5,10,0 : PAPER#5,7 : INK #5,2 7750 Spt=(sprx*10)+spry 7760 PRINT#5, "Sprite Number - "; Spt;" " 7770 AT#5,12,0 7780 IF t=1 OR Spt=sprn THEN 7790 PRINT#5," Selected 7800 ELSE 7810 PRINT#5, "Highlighted" 7820 END IF 7830 OVER#5,-1 7840 END DEFine 7850 : 7870 REMark ** Massage just blanks the ** ** 7880 REMark ** Message area 7900 : 7910 DEFine PROCedure Massage

7920 OVER#5,0

7930 AT#5,10,0 : PAPER#5,4

7940 REMark "xxxxxxxxxxspacexxxxxxxxxxxxxxxxx 7950 PRINT#5," н 7960 OVER#5,-1 7970 END DEFine 7980 : 8000 REMark Arrows - this prints four arrow chars 8010 REMark and all the key options available 8030 : 8040 DEFine PROCedure Arrows 8050 LOCal a 8060 OVER#6,0 : PAPER#6,4 : INK#6,2 : CSIZE#6,2,0 : CLS#6 8070 a=188 8080 PRINT#6, " ";CHR\$(a); 8090 PRINT#6, CHR\$(a+1); 8100 PRINT#6, CHR\$(a+2); 8110 PRINT#6, CHR\$(a+3); 8120 PRINT#6, " ESC ENTER SPACE TAB CTRL B C F R" 8130 END DEFine 8140 : 8160 REMark Arrow - prints @ bottom of the screen 8170 REMark the four arrow characters and ENTER

8190 :

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8200 DEFine PROCedure Arrow

8210 LOCal a

8220 OVER#6,0 : PAPER#6,4 : INK#6,2 : CSIZE#6,2,0 :

CLS#6

- 8230 a=188
- 8240 PRINT#6, " ";CHR\$(a);
- 8250 PRINT#6, CHR\$(a+1);
- 8260 PRINT#6, CHR\$(a+2);
- 8270 PRINT#6, CHR\$(a+3);
- 8280 PRINT#6, " ENTER ";

USB REVIE

- 8290 END DEFine
- 8300 :
- 8310 REMark

aving seen a strand on the QL-User blog regarding a QL to USB keyboard interface I decided to give this a try, as it looked

IAN BURKINSHA

interesting. Say you have a faulty Black Box QL or you want a nostalgic feel to your QL emulator, either on a PC or Raspberry PI this could be for you.

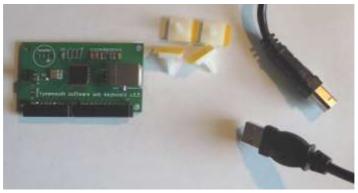
All you need is a Black Box QL, the interface kit and small cross head screw driver. There is no soldering involved. You will be removing the QL PCB from your Black Box QL since this is not used. You could also remove the Microdrives as well since they will not be any use either. Now this also means for Raspberry PI users, with the main QL board removed you could install your Raspberry PI in the QL case as well. It is worth checking if the keyboard membrane is OK and fully works, may be a good time to replace the membrane with one from Richard Mellor at:

http://www.sellmyretro.com/offer/details/2340

Now all the instructions for installing and using this interface are on the following web page, so I will not repeat here.

http://blog.tynemouthsoftware.co.uk/2015/12/day-3-sinclair-ql-usbkeyboard.html

You will receive in the post in a jiffy bag, the interface PCB, 4 self adhesive PCB pillars and a USB cable. So with your Black Box QL you have everything you need.



Actual QL to USB board kit

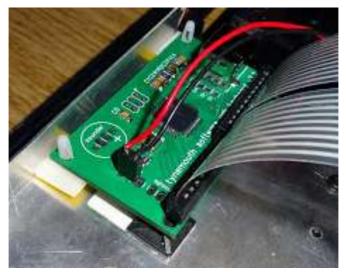
The interface board itself is a well made solder resist and silk screened PCB, using surface mount parts, so is robust. However,

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as always be careful when handing, by making sure you are earthed so that no static damages the PCB. Additionally it is a good idea to handle it by holding the edges of the PCB only.

The PCB is clearly a generic board for various projects, on the Tynemouth pages you will find it is used for a ZX81 or ZX Spectrum to USB keyboard applications plus others.

The heart of the interface is a well know Amtel Mega micro controller running at 16MHz. The code to run this controller is already programmed in, in this case for the QL keyboard membrane, it would need different code for ZX81 or Spectrum, see Tynemouth pages for more details on this. Down one side of the PCB are the two connectors for the keyboard membrane plug into.



Mounting a QL to USB board

There is a two pin connector which is for the power LED, the pin close to the card edge with the keyboard membrane connector is positive, that is the anode of the LED. The other is ground and connected to the cathode of the LED, there is a current limiting resistor on the board so one is not required. The only other connector is the USB connector, which with the supplied cable is the one that plugs into your PC.

OK so you successfully installed the interface, and has all been put together as per the instructions.

With your PC booted up, just plug into a spare USB slot. Wait for your PC to recognise the new device. Then I started with just opening Notepad and typed on the QL keyboard, have to say, worked first time. Just like plugging any other USB device to your PC. You can check in the System Hardware list on your computer. That is on a PC with XP for example Control Panel/ System/Hardware/Device Manager/Keyboards you should see listed 'HID Keyboard Device'.

The QL keyboard will then work in parallel with any other keyboard connected to your PC. Also note that it will then work with any PC program as well as your QL emulators. I tested this with QPC2, QemuLator, SMSQmulator and QL2K emulator with no problems. This interface does work with Raspberry Pi's. I have tested the interface with my Raspberry Pi 2 model B with no problems. Works on all the Pi applications and SMSQmulator. On the Tynemouth Software web pages are examples of using the interface with Raspberry Pi's

Prompt response from Tynemouth Software. Nicely constructed PCB. It works. So what more can I say. (Tynemouth Software have a shop on the Etsy shopping site:

https://www.etsy.com/uk/shop/TynemouthSoftware Ed.)

or those of you who still have just a Black Box QL with little or no Add-ons (and there are still quite a number about), I hope that some of you have accepted the challenge that NEMQLUG (North East Manchester QL User Group), posed for you in the last issue of QUANTA Magazine.

Aming in Superbasic 2 **John** Gilpin

I am referring to the game 2048 on the QL (which we have renamed Q2048L), that John Southern introduced to you. I hope that a number of you tried to understand the programme and run it on your QL. I think that you would agree with me that although the game works, the final output to the screen leaves a lot to be desired. The limitations of SuperBASIC are the cause of this, although slight improvements could be made by using the MODE Keyword and then changing the CSIZE of the output to make the whole grid larger and therefore easier to both see and read.

I have to admit that since I use a "Windoze" Laptop for most of my computing, I tend to use QPC2 V4 which, thanks to Jochen Merz, is now freely available and already has most of the addons referred to above. To go one better and having seen the results of a number of programmes that used it, I suggested that we might use 'Easy Pointer 4' to enhance our game. The combination of QPC2 and Easy Pointer4 (EP4), gives us a much more powerful set of tools to work with.

Although it was my suggestion to use EP4, I have to admit that I

had never used it before so that I was working from scratch with none of the Sub Group members able to help me.

Some time ago, having collected every issue of QUANTA Magazine since its origin way back in February 1984, I remembered seeing an article – or a series of articles on EP4 so I dug out my QUANTA Magazine Library and scanned through the contents pages until I found what I was looking for. In the May 1994 (volume 11 Issue 4) and in the following two issues, June and July,1994 I found a three part article entitled "Easy Pointer Tutorial I,II and III" which turned out to be exactly what I needed.

The articles were written by Norman Dunbar, who for those who take their QLing more seriously will know, turns up every now and again with some QL gems. I re-read his articles thoroughly then returned to the beginning to digest the info better. He (|Norman Dunbar) starts his articles with the statement that the manuals for EASY POINTER and EASY MENU were so badly written that he had to explain in his tutorial much of what the manual should have contained. He starts off with an explanation of the Technical Terms before taking the reader on a "brief tour" of the programme. As a practical reason for writing the articles, he then starts to develop a four-function calculator which I worked through to give me some "experience" using EP4 and Easy Menu.

I came unstuck a number of times before getting a working calculator, and I expect that you too will have early problems with my development of Q2048L. Believe me, this article is so worth reading that I intend to copy the whole thing thus making it available to those who need it (Thanks, Norman for giving me permission to do this!).

I had hoped to make a start on the technical stuff in converting Q2048L into a EP4 programme but time has beaten me once again, so I give you all, the opportunity to dig around and get any

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information you can find. This includes the Pointer Environment, Easy Pointer 4 and Easy Menu together with the version of Norman's Tutorials that I have also produced in a .pdf file (watch this space Ed.).

Prepare yourselves for some interesting programming in the next issue of QUANTA Magazine. There is quite a lot of material on this topic on Dilwyn Jones's Web Site which whether or not you are continuing with us on Q2048L is well worth a look. Log on to:

www.dilwyn.me.uk/index.html

and have a browse. See you in the June/July issue of QUANTA Magazine.

JBGROUP INFORMATION

ubgroup meetings are where QUANTA members and non-

QUANTA members get together to discus, tinker and explore all things QL related. As we are now approaching Spring/Summer (ha!) the holiday season may just be starting for most unless your choice is the Canary Islands (that can happen any time of the year).

This may be a good opportunity to visit your local sub-group. If there is not a sub-group near you why not hold one yourself? Contact the chairman on how to go about it, details on our contacts page, which as always is on page 2, just after the front cover page and just before the contents page. We would also like to hear from subgroups and how their meetings are going. What are the points of discussion, any titbits, interesting issues or problems that crop up. Additionally what is the colour of the wallpaper, quality of the Tea and Coffee and most importantly, what are the subgroups preferences on biscuits.

ONDON QL AND QUANTA GROUP

School Room, which is the basement of the Borough Welsh Congregational Chapel, 90, Southwark Bridge Road, London SE1. This is almost opposite the junction with Marshalsea Road, at the other end of which, 5 minutes walk away, is the Borough Underground Station.

eetings are held in the

Free parking is easily available in Southwark Bridge Road for road users, Cyclists are welcome. Members currently each pay a subscription of £40 per year towards the cost of the hire of the hall and a small additional charge is made for tea/coffee - biscuits are then provided free. Please bring your QL equipment if possible, all types welcome, e.g., PC portable running emulators.

The Group has some systems stored at the venue for its use. In addition, there are lots of donated second user equipment, books, magazines, etc., available for purchase. Time: 2.00 pm. to 5.00 pm., on the second Sunday of the month. No meetings are held in December/January - winter break, or July/August –the summer break, giving 8 meetings a year. Malcolm Cadman 020 8691 5780 or email: <u>QL@mcad.demon.co.uk</u>

eetings are at 'Sarisbury Green Parish Rooms' see (http://sgpr.org.uk/?page_id=28) On the first Saturday each month from 1PM to 5PM. Contact Graham Evans 023 8040 3350 or email: graham@grayfire.f9.co.uk

NEMQLUG - NORTH EAST MANCHESTER

Solent Subgroup

QL USER GROUP

eetings are held on the last Thursday of the month

(except August & December) from 7.00pm to 11.00pm. All are welcome to our meetings. The venue is usually at John Gilpin's home 181, Urmston Lane, Stretford, M/cr M32 9EH (near Junction 7 on M60 motorway) but currently at Alison Southern's home, 40, Distaff Road, Poynton, Cheshire, SK12 1HN. During 2016 there will be additional Sunday workshop meetings at 181, Urmston Lane on the following dates: April 24th; June 26th and Oct 30th from 1.00pm to 7.00pm. If the remaining Sunday Workshops continue to be a success then it is hoped to hold them about every three months next year - All Welcome.

Contact John/Sarah Gilpin 0161 865 2872 for further details. or by email: <u>thegilpins@btinternet.com</u>

QLUG meets at George Gwilt's home every second Sunday in the month. Please contact George Gwilt before coming, to get the location by email: Gdggler@gmail.com

TISH QL USERS GROUP

SURREY QUANTA SUBGROUP (SQSG)

he group is currently trying other venues in the Leatherhead - Epsom

area. If you plan to attend but do not get our emails, please contact Ken Bain for the latest location. Meetings are 8.00 to 10.00 pm on a Wednesday, the last of each month (none in December), but this can vary. Contact Ken Bain 01932 347432 (to midnight), or email: <u>kenb@bcs.org.uk</u>

SSEX QL USER GROUP

urrently without a meeting place, anyone interested should contact

Keith Mitchell - 01903 742263 or Roy Wood 01273 430501 or email: gbranch@qbranch.demon.co.uk.

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All Contributions are welcome Copy by Email to - <u>editor@quanta.org.uk</u> Copy by Snail Mail, see page 2 for address

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